

CLAIMS

The current claim set of the application is presented below. Indications as to the status of the claims ("original", "currently amended", "cancelled", "new", etc.) appear in parentheses after the claim number. Deletions are identified in bold with double brackets and strikethrough (e.g. ~~[[deletion]]~~) and new text is identified in bold with underlining (e.g. **new language**).

1. (Currently Amended) A medical lead for electrical stimulation or sensing, the medical lead comprising a generally flat paddle on the distal end of the lead body, **the paddle defining an imaginary longitudinal center line**, the paddle having:
 - first and second major surfaces;
 - an electrode array comprising at least one electrode in electrical communication with the electrical conductor, the electrode array having directional electrical field properties relative to the first and major surfaces of the paddle; and
 - an orientation marker for determining orientation of the lead, the orientation marking including fluoroscopically viewable material **displaced from the longitudinal center line on one side thereof such that when viewed under fluoroscopy as being on a particular side of the imaginary center line the orientation of the paddle can be determined.**
2. (Original) The medical lead of claim 1 wherein the electrode array comprises electrodes exposed only through the first major surface of the paddle, and the orientation marker provides a definite indication of the direction the paddle is facing.
3. (Original) The medical lead of claim 2 in which the electrodes are recessed relative to the major surface.
4. (Original) The medical lead of claim 1 wherein the orientation marker is coded to identify the model or serial number of the lead.
5. (Original) The medical lead of claim 1 wherein the fluoroscopically viewable material comprises radio-opaque material.

6. (Original) The medical lead of claim 5 wherein the radio-opaque material comprises platinum or platinum/iridium alloy.
7. (Currently Amended) The medical lead of claim 1 wherein ~~[[the paddle defines an imaginary longitudinal center line, and]]~~ the orientation marker comprises a discrete radio-opaque marker displaced from the longitudinal center line such that when viewed under fluoroscopy as being on a particular side of the imaginary center line the orientation of the paddle can be determined.
8. (Original) The medical lead of claim 7 wherein the orientation marker is formed of radio-opaque material selected from the group consisting of platinum and platinum/iridium alloy.
9. (Original) The medical lead of claim 8 wherein the paddle is formed of substantially transparent polyurethane material.
10. (Original) The medical lead of claim 1 wherein the orientation marker comprises radio-opaque material arranged in an asymmetric manner with respect to the width of the paddle.
11. (Original) The medical lead of claim 1 wherein the orientation marker comprises radio-opaque material dispersed in the paddle in an asymmetric manner with respect to the width of the paddle.
12. (Original) The medical lead of claim 1 wherein the orientation marker comprises radio-opaque material dispersed substantially uniformly in an asymmetric portion arranged asymmetrically with respect to the width of the paddle.
13. (Currently Amended) A medical lead for electrical stimulation or sensing, the medical lead comprising:
a lead body having proximal and distal ends, and at least one electrical conductor extending between the proximal and distal ends;

a connector on the proximal end of the lead body in electrical communication with the electrical conductor; and

a generally flat paddle on the distal end of the lead body, **the paddle defining an imaginary longitudinal center line**, the paddle having:

proximal and distal ends, first and second major surfaces, and a length extending between the proximal and distal ends;

an electrode array comprising at least one electrode in electrical communication with the electrical conductor, the electrode array having directional electrical field properties relative to the first and second major surfaces; and

an orientation marker for determining orientation of the lead, the orientation marking including fluoroscopically viewable material **displaced from the longitudinal center line on one side thereof such that when viewed under fluoroscopy as being on a particular side of the imaginary center line the orientation of the paddle can be determined.**

14. (Original) The medical lead of claim 13 wherein the electrode array comprises electrodes exposed only through the first major surface of the paddle, and the orientation marker provides a definite indication of the direction the paddle is facing.

15. (Original) The medical lead of claim 14 in which the electrodes are recessed relative to the major surface.

16. (Original) The medical lead of claim 13 wherein the orientation marker is coded to identify the model or serial number of the lead.

17. (Original) The medical lead of claim 13 wherein the fluoroscopically viewable material comprises radio-opaque material.

18. (Original) The medical lead of claim 17 wherein the radio-opaque material comprises platinum or platinum/iridium alloy.

19. (Currently Amended) The medical lead of claim 13 wherein ~~[[the paddle defines an imaginary longitudinal center line, and]]~~ the orientation marker comprises a discrete radio-opaque marker displaced from the longitudinal center line such that when viewed under fluoroscopy as being on a particular side of the imaginary center line the orientation of the paddle can be determined.
20. (Original) The medical lead of claim 19 wherein the orientation marker is formed of radio-opaque material selected from the group consisting of platinum and platinum/iridium alloy.
21. (Original) The medical lead of claim 20 wherein the paddle is formed of substantially transparent polyurethane material.
22. (Original) The medical lead of claim 13 wherein the orientation marker comprises radio-opaque material arranged in an asymmetric manner with respect to the width of the paddle.
23. (Original) The medical lead of claim 13 wherein the orientation marker comprises radio-opaque material dispersed in the paddle in an asymmetric manner with respect to the width of the paddle.
24. (Original) The medical lead of claim 13 wherein the orientation marker comprises radio-opaque material dispersed substantially uniformly in an asymmetric portion arranged asymmetrically with respect to the width of the paddle.

25. (Original) A method of use of a medical lead having a paddle having first and second major surfaces, the paddle defining an imaginary longitudinal center line, an electrode array comprising at least one electrode, the electrode array having directional electrical field properties relative to the first and second major surfaces, and an orientation marker for determining orientation of the lead, the orientation marking including fluoroscopically viewable material displaced from the longitudinal center line on one side thereof such that when viewed under fluoroscopy as being on a particular side of the imaginary center line the orientation of the paddle can be determined, the method comprising:

implanting the medical lead into a desired stimulation or sensing site in a patient; and
fluoroscopically viewing the orientation marker of the implanted lead; and
based on step of fluoroscopically viewing the orientation marker of the implanted lead, determining the orientation of the paddle based on which side of the longitudinal center line of the paddle that the orientation marker appears.

24. (Original) The method of claim 23 wherein the electrode array comprises electrodes exposed only through the first major surface of the paddle, the step of fluoroscopically viewing the orientation marker of the implanted lead providing a definite indication of the direction the paddle is facing.

25. (Original) The method of claim 23 wherein the orientation marker is coded to identify the model or serial number of the lead, the method further comprising determining the model or serial number of the lead based on the step of fluoroscopically viewing the orientation marker of the implanted lead.

26. (Currently Amended) The method of claim 23 wherein ~~[[the paddle defines an imaginary longitudinal center line, and]]~~ the orientation marker comprises a discrete radio-opaque marker displaced from the longitudinal center line, the step of determining the orientation of the paddle including viewing the orientation marker and the paddle, and determining on which side of the imaginary center line the orientation marker appears to be positioned.

27. (Currently Amended) The method of claim ~~[[4]]~~ 25 wherein the orientation marker comprises radio-opaque material arranged in an asymmetric manner with respect to the width of the paddle, the step of determining the orientation of the paddle including viewing an apparent asymmetric position of the orientation marker on the paddle, and determining, based on the apparent asymmetric position of the orientation marker, which direction the paddle is facing.